

ANNUAL FIRE PUMP SYSTEM SERVICE TEST REPORT (Updated 5/21/03)

NFPA 25 and the Uniform Fire Code requires fire pump systems to be service tested annually. In Mountain View, a record of the test, along with any deficiencies found, shall be submitted to the Mountain View Fire Department. Record the test results below and describe how any deficiencies were corrected in the table at the end of this report. The test shall only be conducted by a contractor holding a license issued by the State Fire Marshal.

Building or Complex Name: _____

Site Location (address): _____

Building Owner: _____

Mailing Address: _____

Phone: _____ Date of Construction: _____

System Description: _____

Testing Contractor: _____ State Fire Marshal License #: _____

Testing Contractor Address: _____ Phone: _____

Certification Date: _____

(DEF= Deficient)

| PUMP INSPECTION | | | |
|---|------------------------------|------------------------------|------------------------------|
| Pump room at least 40 F. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Pump room for diesels without engine heaters at least 70F. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Ventilating louvers free to operate. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Suction, discharge and bypass valves open. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Piping free from leaks. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Suction and system pressure gauges normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Suction reservoir, if provided, is full. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Controller indicates power "on" | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Transfer switch indicates normal situation. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Isolation switch closed. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Reverse phase alarm indicator is "Off" or normal phase rotation indicator is "On". | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Oil level in vertical motor sight is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Steam pressure gauge for steam driven pump is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Circulation relief valve flowing water while pump is operational. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Pressure relief valve operating with proper pressure downstream while pump is operational | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |

| DIESEL ENGINE INSPECTION | | | |
|--|------------------------------|------------------------------|------------------------------|
| Fuel tank at least 2/3 full. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Controller selector switch is in auto position. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Battery voltage and readings are normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Battery charging current readings are normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Battery indicators are "on" or failure indicators "Off". | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| All alarm indicators are off. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record engine running time meter reading: _____. | | | |
| This reading is appropriately higher than the previous reading | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Oil level in right angle gear drive is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Crankcase oil level is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Cooling water level is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Electrolyte level in batteries is normal. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Battery terminals are free from corrosion. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Water-jacket heater is operational. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |

| DIESEL PUMP TEST | | | |
|--|------------------------------|------------------------------|------------------------------|
| Pump starts automatically. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record starting pressure: _____ psi | | | |
| Pump run for at least 30 minutes | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record suction pressure while running: _____ | | | |
| Record discharge pressure while running: _____ | | | |
| All readings above are within normal operating parameters. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Pump packing gland showing no discharge. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Operation is free unusual noise or vibration. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Packing boxes, bearings and pump casing are free from overheating. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record time for motor to accelerate to full speed: _____ | | | |
| Record time for engine to reach running speed: _____ | | | |
| Record engine oil pressure: _____ | | | |
| Record speed indicator: _____ | | | |
| Record water temperature: _____ | | | |
| Record ammeter reading: _____ | | | |
| All readings above are within normal operating parameters. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Cooling water is flowing from heat exchanger. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |

| ELECTRIC PUMP TEST | | | |
|---|------------------------------|------------------------------|------------------------------|
| Pump starts automatically. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record starting pressure: _____ psi | | | |
| Pump run for at least 10 minutes | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record suction pressure while running: _____ | | | |
| Record discharge pressure while running: _____ | | | |
| All readings above are within normal operating parameters. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Pump packing gland showing no discharge. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Operation is free unusual noise or vibration. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Packing boxes, bearings and pump casing are free from overheating. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Record time for motor to accelerate to full speed: _____ | | | |
| For reduced voltage or reduced current starting, record time controller is on first step: _____ | | | |
| For automatic stop controllers, record time pump runs after starting: _____ | | | |
| All readings above are within normal operating parameters. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Cooling water is flowing from circulation relief valve. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |

FULL SYSTEM PUMP TEST METHOD

Test was run using the following method (check one):*

- ❑ Method A. Discharge of flow through hose streams. Flow readings taken at each hose stream.
- ❑ Method B. Discharge through by-pass flow meter to drain or suction reservoir. Flow readings taken by flow meter.
- ❑ Method C. Discharge through by-pass flow meter directly returned to pump suction. Flow readings taken by flow meter.

*Note: At least once every 3 years, Method A or Method B must be used.

(DEF= Deficient)

FULL SYSTEM PUMP TEST RESULTS

| | NO FLOW | RATED FLOW | PEAK FLOW |
|---|------------------------------|------------------------------|------------------------------|
| Suction pressure | | | |
| Discharge pressure | | | |
| Flow | N/A | | |
| Electrical flow and current | N/A | | |
| Pump speed | N/A | | |
| Values in the above table are acceptable. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| No flow (churn) test was run for 30 minutes. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Circulation relief valve and pressure relief valve operated properly during all flow tests. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| No alarm indicators or other visible abnormalities observed during no-flow test. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Low suction throttling device test: | | | |
| Low suction pressure was simulated. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Throttling action was free from abnormalities. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Return to full flow was free from abnormalities. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Automatic transfer switch test: | | | |
| Power failure was simulated during peak flow. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| Connection was made to an alternate power source. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| After termination of simulated power failure, motor reconnected to the normal power source. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| All alarm conditions were simulated. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |
| All alarms operated properly. | <input type="checkbox"/> Yes | <input type="checkbox"/> N/A | <input type="checkbox"/> DEF |

LIST DEFICIENCIES FOUND AND HOW CORRECTED

[illegible]

Return completed form to:
City of Mountain View Fire Department
1000 Villa Street
Mountain View, CA 94041
Attn: Fire Marshal

PUMP FLOW TEST PROCEDURES

1. Start pump using manual start.
2. Check pump for proper operation:
 - A. Packing glands should leak water at about 1 drip per second.
 - B. Check for correct RPM (diesel)
 - C. Look for water flowing from engine cooling (diesel).
 - D. Look for water flow from circulating relief valve (electric).
 - E. Listen for any unusual sounds or vibrations.
 - F. Look for abnormal water leakage.
 - G. Check both pump and drivers for any signs of overheating.
3. Check and record pressure at suction and discharge gauge.
4. Check and record RPM
5. Check and record amperage.
6. Flow one test hose and take pitio reading and record results.
7. Repeat Steps 2 through 5.
8. Continue opening one hose at a time and repeat all steps until all hoses are flowing.
9. With all hoses flowing, shut off pump and restart under full load (all hoses). The pump should run up to full speed with no signs of laboring.
10. Convert pitio readings and plot pump curve.
11. Check plotted curve against information on pump name plate.

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